

Taroh TERASHI et al., S.N. 10/666,235
Page 2

Dkt. 2271/71043

Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) A method for adhering parts to a target with light energy curable adhesive, said method comprising the steps of:

positioning a part and an adhering target at a prescribed relative position;

coating plural sections between the part and adhering target with a light energy curable adhesives adhesive;

irradiating light energy to ~~at least one of the light energy curable adhesives~~ adhesive at one or more of the plural sections;

generating a curing shrinkage force in the ~~at least one of the light energy curable adhesives~~ adhesive at the one or more of the plural sections, said shrinkage force causing the part and the target to be relatively displaced from each other;

changing irradiation energy such that ~~at least one portion of at least one of the light energy curable adhesives~~ adhesive at selected ones of the plural sections experiences a change in irradiation energy when the part and the target are relatively displaced from each other in the course of shrinkage of ~~the at least one of the light energy curable adhesives~~ adhesive so that at least one of the curing shrinkage forces can be changed and stresses generated by the curing shrinkage forces can be offset; and

adhering the part to the adhering target while maintaining the part and target at the prescribed position.

Taroh TERASHI et al., S.N. 10/666,235
Page 3

Dkt. 2271/71043

2. (original) The method according to claim 1, wherein said curing energy changes one of an amount and a direction of at least one of the stresses.

3. (previously presented) The method according to claim 1, further comprising the steps of:

detecting lateral displacement of the part from the adhering target during curing of the light energy curable adhesive;

feeding back a detection result; and

changing the curing shrinkage force in accordance with the feed back detection result so that the relative position of the part and the adhering target can be adjusted.

4. (currently amended) ~~[[The]]~~ A method according to any one of claims 1 to 3 for adhering parts to a target with light energy curable adhesive, said method comprising the steps of:

positioning a part and an adhering target at a prescribed relative position;

coating plural sections between the part and adhering target with a light energy curable adhesive;

irradiating light energy to the light energy curable adhesive at one or more of the plural sections;

generating a curing shrinkage force in the light energy curable adhesive at the one or more of the plural sections, said shrinkage force causing the part and the target to be relatively

Taroh TERASHI et al., S.N. 10/666,235
Page 4

Dkt. 2271/71043

displaced from each other;

changing irradiation energy such that the light energy curable adhesive at the one or more of the plural sections experiences a change in irradiation energy when the part and the target are relatively displaced from each other in the course of shrinkage of the light energy curable adhesive so that at least one of the curing shrinkage forces can be changed and stresses generated by the curing shrinkage forces can be offset; and

adhering the part to the adhering target while maintaining the part and target at the prescribed position,

wherein said curing shrinkage forces are adjusted to be even by selectively irradiating the light energy to the light energy curable adhesives adhesive at at least one of the plural sections so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

5. (withdrawn) The method according to any one of claims 1 to 3, wherein said curing shrinkage forces are adjusted to be even by changing intensity of the light energy irradiated to each of the light energy curable adhesives so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

6. (withdrawn) The method according to any one of claims 1 to 3, wherein said curing shrinkage forces are adjusted to be even by changing an irradiation area of the light energy irradiated to at least one of the light energy curable adhesives so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

Taroh TERASHI et al., S.N. 10/666,235
Page 5

Dkt. 2271/71043

7. (withdrawn) The method according to any one of claims 1 to 3, wherein said curing shrinkage forces are adjusted to be even by coating at least one of the plural sections with plural light energy curable type adhesives having different shrinkage characteristics to be selectively irradiated when selected displacement from said relative position occurs so as to change and offset one of an amount and a direction of at least one of the stresses.

8. (withdrawn) The method according to any one of claims 1 to 3, wherein said curing shrinkage forces are adjusted to be even by coating at least one of the plural sections with a different amount of light energy curable type adhesive so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

9. (withdrawn) The method according to any one of claims 1 to 3, wherein said curing shrinkage forces are adjusted to be even by coating at least one of the plural sections with light energy curable type adhesive in a different shape so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

10. (withdrawn) A parts adhering apparatus, comprising:

a coating device configured to coat plural sections between a part and an adhering target with light energy curable adhesives operative to adhere the part to the adhering target;

a light energy irradiating device configured to irradiate light energy for curing the light energy curable adhesive;

a detecting device configured to detect displacement of the part from the adhering target;

Taroh TERASHI et al., S.N. 10/666,235
Page 6

Dkt. 2271/71043

and

a curing shrinkage force control device configured to control the light energy irradiating device to change the light so that curing shrinkage forces generated at the plural sections and applied to the adhering part and target can be even, and so that stresses generated by the curing shrinkage forces can be offset when displacement is detected by the detecting device.

11. (withdrawn) The parts adhering apparatus according to claim 10, wherein said light energy irradiating device changes the energy of the light in order to change at least one of the curing shrinkage forces so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

12. (withdrawn) The parts adhering apparatus according to claim 10, further comprising a feed back device configured to feed back detection result to a light energy irradiating device controller so as to change the light energy so that a relative position of the part and the adhering target can be adjusted.

13. (withdrawn) The parts adhering apparatus according to any one of claims 10 to 12, further comprising an activation control device configured to selectively activate the light energy irradiating device in accordance with displacement detected by the detecting device so as to change at least one of the curing shrinkage forces so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

Taroh TERASHI et al., S.N. 10/666,235
Page 7

Dkt. 2271/71043

14. (withdrawn) The parts adhering apparatus according to any one of claims 10 to 12, further comprising an irradiation intensity control device configured to change intensity of the light energy in accordance with displacement detected by the detecting device so as to change at least one of curing shrinkage forces so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

15. (withdrawn) The parts adhering apparatus according to any one of claims 10 to 12, further comprising an irradiation area control device configured to change an irradiation area of the light energy in accordance with displacement detected by the detecting device so as to change at least one of curing shrinkage forces so that one of an amount and a direction of at least one of the stresses can be changed to be offset.

16. (withdrawn) The parts adhering apparatus according to any one of claims 10 to 12, wherein one of an amount and a direction of at least one of said stresses is changed by providing plural light energy curable type adhesive having different shrinkage characteristics to at least one of the curing sections.

17. (withdrawn) The part adhering apparatus according to any one of claims 10 to 12, wherein one of an amount and a direction of at least one of said stresses is changed and differentiated from another one of the stresses by providing a different amount of the light energy curable adhesive to at least one of the curing sections.

Taroh TERASHI et al., S.N. 10/666,235
Page 8

Dkt. 2271/71043

18. (withdrawn) The parts adhering apparatus according to any one of claims 10 to 12, wherein one of an amount and a direction of at least one of said stresses is changed by coating light energy curable adhesive in a different shape at least at one of the plural sections.